

CLAIMS

1. A drug dispenser to be positioned downstream of a drug feeder, the drug dispenser being adapted to receive solid drugs from the drug feeder, to temporarily accumulate the drugs, and to discharge the accumulated drugs,
5 comprising a receptacle having an inner peripheral surface, an open top and a bottom adapted to be opened and closed,
at least part of the inner peripheral surface being formed by a movable wall adapted to move when the bottom of the receptacle is opened.
- 10 2. The drug dispenser as defined in claim 1,
wherein the receptacle has a substantially rectangular inner shape with longer sides and shorter sides as seen in a plan sectional view,
the inner peripheral surface comprising a plurality of faces,
at least one of the faces that form the longer sides being the movable
15 wall.
3. The drug dispenser as defined in claim 1,
the movable wall being adapted to rotate and having an arcuate portion.
- 20 4. The drug dispenser as defined in claim 1,
the movable wall being situated around a position where the drugs are expected to be accumulated.
5. The drug dispenser as defined in claim 1,
25 wherein the receptacle comprises an outer receptacle portion and an inner receptacle portion accommodated in the outer receptacle portion,
the outer receptacle portion having an opening at either of its top and

bottom,

the inner receptacle portion having an opening at one end thereof and a closure at the other end opposite to the one end and being invertible within the outer receptacle portion.

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6. The drug dispenser as defined in claim 1,

wherein the receptacle comprises an outer receptacle portion and an inner receptacle portion accommodated in the outer receptacle portion,

the outer receptacle portion having an opening at either of its top and
10 bottom and an arcuate portion at its inner surface,

the inner receptacle portion having an outer surface in substantially conformity with the arcuate inner surface of the outer receptacle portion, the outer surface having an opening formed at a part thereof,

the inner receptacle portion being rotatable within the outer receptacle
15 portion,

so that the outer surface of the inner receptacle portion closes the opening at the bottom of the outer receptacle portion when the inner receptacle portion is at a predetermined angular position and that the opening of the inner receptacle portion is in conformity with the opening of the outer
20 receptacle portion when the inner receptacle portion is at another predetermined angular position.

7. The drug dispenser as defined in claim 1,

wherein the receptacle comprises an outer receptacle portion and an
25 inner receptacle portion accommodated in the outer receptacle portion,

the outer receptacle portion having an opening at either of its top and bottom and an arcuate portion at its inner surface,

the inner receptacle portion having an outer surface in substantially conformity with the arcuate inner surface of the outer receptacle portion, the outer surface having an opening formed at a part thereof,

the inner receptacle portion being rotatable within the outer receptacle
5 portion,

so that the inner receptacle portion is adapted to make at least one and a half rotations in discharging the drugs.

8. The drug dispenser as defined in claim 1, further comprising:
10 a casing accommodating the receptacle;
an engaging portion normally protruding from and capable of being retracted into the casing; and
a pressing portion for pressing the engaging portion into the casing,
so that the engaging portion is retracted into the casing when the
15 pressing portion is pressed.

9. A drug filling apparatus comprising:
a drug supplying section provided with a plurality of drug feeders adapted to send out solid drugs;
20 the drug dispenser as defined in claim 1 adapted to temporarily accumulate the drugs sent out from the drug feeder and to discharge the accumulated drugs; and
a drug filling section adapted to fill the drugs discharged from the drug dispenser into a predetermined container or wrapping material.

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10. A drug filling apparatus comprising:
a plurality of drug feeders vertically and horizontally arranged in a

matrix;

a plurality of common passageways each corresponding to at least one column of the drug feeders;

the drug dispenser as defined in claim 1 positioned downstream of each
5 of the common passageways; and

a drug filling section adapted to fill the drugs discharged from the drug dispenser.

11. A drug dispenser to be positioned downstream of a drug feeder, the
10 drug dispenser being adapted to receive solid drugs from the drug feeder, to temporarily accumulate the drugs, and to discharge the accumulated drugs, comprising:

a receptacle having an opening at either of its top and bottom;

a closing member for opening and closing the opening at the bottom of
15 the receptacle; and

a scraper adapted to scrape a part of the inner surface of the receptacle or a vicinity of the part when the closing member opens the opening at the bottom of the receptacle.

20 12. The drug dispenser as defined in claim 11,

wherein the receptacle comprises an outer receptacle portion and an inner receptacle portion accommodated in the outer receptacle portion,

the outer receptacle portion having an opening at either of its top and bottom,

25 the inner receptacle portion having an opening at one end thereof, a closure at the other end opposite to the one end, a closing member for opening and closing the opening at the bottom thereof, and a scraper adapted

to scrape the inner surface of the outer receptacle portion in accordance with rotation of the inner receptacle portion.

13. The drug dispenser as defined in claim 11,

5 the scraper having a non-circular shape and being adapted to rotate along the inner surface of the outer receptacle portion.

14. The drug dispenser as defined in claim 11,

 wherein the receptacle comprises an outer receptacle portion and an
10 inner receptacle portion accommodated in the outer receptacle portion,

 the outer receptacle portion having an opening at either of its top and bottom,

 the inner receptacle portion being rotatable within the outer receptacle portion and having an opening at one end thereof, a closure at the other end
15 opposite to the one end, a closing member for opening and closing the opening at the bottom of the outer receptacle portion, and a scraper having an arm shape and being rotatable along the inner surface of the outer receptacle portion.

20 15. The drug dispenser as defined in claim 11,

 the closing member being a linearly movable shutter,

 the scraper being integrated with the closing member.

16. The drug dispenser as defined in claim 11, further comprising:

25 a casing accommodating the receptacle;

 an engaging portion normally protruding from and capable of being retracted into the casing; and

a pressing portion for pressing the engaging portion into the casing,
so that the engaging portion is retracted into the casing when the
pressing portion is pressed.

5 17. A drug filling apparatus comprising:

a drug supplying section provided with a plurality of drug feeders that
are adapted to send out solid drugs;

the drug dispenser as defined in claim 11 adapted to temporarily
accumulate the drugs sent out from the drug feeder and to discharge the
10 accumulated drugs; and

a drug filling section adapted to fill the drugs discharged from the drug
dispenser into a predetermined container or wrapping material.

18. A drug filling apparatus comprising:

15 a plurality of drug feeders vertically and horizontally arranged in a
matrix;

a plurality of common passageways each corresponding to at least one
column of the drug feeders;

the drug dispenser as defined in claim 11 positioned downstream of
20 each of the common passageways; and

a drug filling section adapted to fill the drugs discharged from the drug
dispenser.

19. A drug dispenser to be positioned downstream of a drug feeder, the
25 drug dispenser being adapted to receive solid drugs from the drug feeder, to
temporarily accumulate the drugs, and to discharge the accumulated drugs,
comprising:

a receptacle having an opening at either of its top and bottom;
a closing member for opening and closing the opening at the bottom of
the receptacle; and

a scraper adapted to cross within the receptacle when the closing
5 member opens the opening at the bottom of the receptacle.

20. The drug dispenser as defined in claim 19,
the closing member being a linearly movable shutter,
the scraper being integrated with the closing member.

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21. The drug dispenser as defined in claim 19,
the closing member being a linearly movable shutter,
the scraper having a sloping side and being integrated with the closing
member, so as to cross within the receptacle with the sloping side facing
15 forward in accordance with a linear movement of the closing member.

22. The drug dispenser as defined in claim 19, further comprising:
a casing accommodating the receptacle;
an engaging portion normally protruding from and capable of being
20 retracted into the casing; and
a pressing portion for pressing the engaging portion into the casing,
so that the engaging portion is retracted into the casing when the
pressing portion is pressed.

25 23. A drug filling apparatus comprising:
a drug supplying section provided with a plurality of drug feeders that
are adapted to send out solid drugs;

the drug dispenser as defined in claim 19 adapted to temporarily accumulate the drugs sent out from the drug feeder and to discharge the accumulated drugs; and

a drug filling section adapted to fill the drugs discharged from the drug
5 dispenser into a predetermined container or wrapping material.

24. A drug filling apparatus comprising:

a main body;

a plurality of drug feeders adapted to send out solid drugs and arranged
10 vertically and horizontally in a matrix in the main body;

a plurality of common passageways each corresponding to at least one column of the drug feeders;

a drug dispenser positioned downstream of each of the common passageways, the drug dispenser being adapted to receive solid drugs from
15 the drug feeder, to temporarily accumulate the drugs, and to discharge the accumulated drugs through its predetermined opening; and

a drug filling section adapted to fill the drugs discharged from the drug dispenser into a predetermined container or wrapping material,

wherein the drug dispenser comprises a receptacle, a power source and
20 a casing accommodating the receptacle and the power source integrally, the receptacle being adapted to accumulate the drugs, the power source being adapted to open an opening of the receptacle,

wherein the drug dispenser further comprises an engaging portion normally protruding from and capable of being retracted into the casing, and
25 a pressing portion for pressing the engaging portion into the casing, so that the engaging portion is retracted into the casing when the pressing portion is pressed, and

wherein the main body has a plurality of compartments for installing the casing of the drug dispenser therein, the compartment having an engaging hole or a slot, so as to install the drug dispenser in the compartment with the pressing portion of the drug dispenser pressed to make the engaging portion retracted into the casing, the engaging portion being engaged with the engaging hole or the slot formed in the compartment.

25. The drug filling apparatus as defined in claim 24,
wherein the casing has a casing connector at its distal end and the main body has a main body connector in the compartment thereof,
the engagement hole or the slot extending in a longitudinal direction of the casing,
so that the casing connector and the main body connector are connected by sliding the casing with the engaging portion engaged with the engaging hole or the slot in the compartment.